

**WHAT IS CLAIMED IS:**

SUB A1

1. An electrical connector, comprising:  
a housing having a retention structure; and  
5 a plurality of contacts extending through said housing, each said contact including:  
a medial section;  
a mounting portion extending from one end of said medial section; and  
a compressive mating portion extending from another end of said medial section  
and having a distal end,  
10 wherein said retention structure of said housing engages said distal ends of said  
compressive mating portions of said contacts to preload said contacts.
- 15 2. The electrical connector as recited in claim 1, further comprising a fusible element  
secured to said mounting portion of said contact.
3. The electrical connector as recited in claim 1, wherein said housing comprises  
alignment posts.
- 20 4. The electrical connector as recited in claim 1, wherein said retention structure  
comprises a plurality of projections that engage associated contacts.
5. The electrical connector as recited in claim 1, wherein said housing comprises a  
plurality of channels for receiving associated contacts.
- 25 6. The electrical connector as recited in claim 1, wherein said contacts are disposed at a  
pitch of approximately 1mm or less.

7. The electrical connector as recited in claim 1, further comprising a vacuum pickup cap that engages said housing.

8. The electrical connector as recited in claim 1, wherein said contacts are disposed so  
5 that neighboring contacts are oriented in opposite directions in an alternating manner.

9. The electrical connector as recited in claim 1, wherein said contacts are oriented in the same direction.

10. The electrical connector as recited in claim 9, wherein said contacts are disposed in a  
10 staggered arrangement.

11. The electrical connector as recited in claim 1, wherein said retention structure  
15 comprises a plurality of shoulders that block associated distal ends of said contacts.

12. The electrical connector as recited in claim 1, wherein said medial section of each said  
contact comprises a tapered cantilever beam.

13. The electrical connector as recited in claim 1, wherein each mating portion is flanked  
20 by a tab providing a preload to said contact, said tab having a projection extending therefrom.

14. The electrical connector as recited in claim 1, wherein said end of each said medial  
portion in which said mounting portion extends further comprises a compressive section.

25 15. The electrical connector as recited in claim 1, further comprising a bend disposed between said medial section and said compressive mating portion, said bend providing

said contact with normal force to said connector.

Sub A2

16. An electrical connector, comprising:

a housing;

5 a plurality of contacts extending through said housing and exhibiting a preload; and  
a plurality of fusible elements, each secured to a respective one of said contacts.

17. The electrical connector as recited in claim 16, wherein said fusible element is a solder  
body.

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18. The electrical connector as recited in claim 17, wherein said solder body is a solder  
ball.

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19. The electrical connector as recited in claim 16, wherein said housing comprises a  
retention structure.

20. The electrical connector as recited in claim 19, wherein each said contact includes:

a medial section;

a mounting portion extending from one end of said medial section; and

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a compressive mating portion extending from another end of said medial section  
and having a distal end,

wherein said retention structure of said housing engages said distal ends of said  
compressive mating portions of said contacts to preload said contacts.

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21. The electrical connector as recited in claim 16, wherein said contacts are disposed so  
that neighboring contacts are oriented in opposite directions in an alternating manner.

22. The electrical connector as recited in claim 16, wherein said contacts are oriented in the same direction.

5 23. The electrical connector as recited in claim 22, wherein said contacts are disposed in a staggered arrangement.

24. The electrical connector as recited in claim 16, further comprising a vacuum pickup cap that engages said housing.

Sub 18 25. A method of making an electrical connector, comprising the steps of:  
providing a housing;  
inserting a plurality of contacts into said housing;  
securing a fusible elements to each of said contacts; and  
preloading said contacts.

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26. The method as recited in claim 25, wherein the preloading step comprises engaging distal ends of said contacts with said housing.

20 27. The method as recited in claim 25, wherein inserting said plurality of contacts comprises engaging each said contact with an associated projection of said housing.

28. The method as recited in claim 25, wherein inserting said plurality of contacts comprises inserting said contacts into associated channels in said housing.

25 29. The method as recited in claim 25, wherein inserting said plurality of contacts into said housing comprises inserting said contacts so that neighboring contacts are oriented in opposite directions in an alternating manner.

30. The method as recited in claim 25, wherein inserting said plurality of contacts into said housing comprises orienting said contacts in the same direction.

5 31. The method as recited in claim 30, wherein inserting said plurality of contacts into said housing further comprises arranging said contacts in a staggered arrangement.

32. The method as recited in claim 25, wherein inserting said plurality of contacts into said housing comprises compressing each contact to insert a tab into an associated opening in  
10 the housing.

33. The method as recited in claim 25, further comprising latching a vacuum pickup cap to the housing.

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